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Saturday, June 21, 1851.

State Debt of Indiana.

Messrs. Winslow, Lanier & Co., of New York, well known for their connection with the leading railroad enterprises in the western States, have published a pamphlet containing a full statement of the State debt of Indiana, embracing the history of its origin, and the subsequent arrangements which have been made for its payment. The pamphlet is a very valuable paper, as it contains a full account of the present condition of this debt, and from the means of information possessed by Winslow, Lanier & Co., and the intimate knowledge which they have upon the subject, may be relied upon as entirely correct.

The Legislature of Indiana, of the year 1835–6, passed a law providing for an extensive system of internal improvements, and authorised the issue of five per cent. bonds to raise the necessary means. These bonds were sold to the amount of $11,048,000; but the State received only about $8,000,000, which was expended upon various lines of railroad and canal. About $3,048,000 was lost through the failure of the depositories of the money; the sales of the whole being regarded as *bona fide*. Many roads, canals and turnpikes were commenced, but none completed, except about 27 miles of the Madison and Indianapolis railroad, and the Erie and Wabash canal, to Lafayette, a distance of 160 miles. In 1841, the State, from financial embarrassments, was forced to suspend work on all lines in progress, and failed to meet the interest on her bonds.

Matters remained in this situation till the Legislative session of 1846–7, when an act was passed, making provision for the payment of her public debt, the main features of which are as follows:

For one half the principal, the State agreed to provide by taxation, and give her creditors certificates of stock therefor, bearing 5 per cent. interest, redeemable at the pleasure of the State after twenty years.

For one half the arrears of interest, to give certificates of stock, bearing interest at the rate of 2½ per cent. per annum, after the 1st January, 1853, redeemable at the pleasure of the State, also provided for by taxation.

The payment of the other half, principal and interest, was made chargeable on the Wabash and Erie canal, under certain stipulations and restrictions, as hereinafter mentioned—for the final payment whereof the State is in no wise responsible.

Growing out of this funding arrangement, the state debt was divided into two parts, one called "Indiana State Stocks," and provided for by taxation, and for which the faith of the state is pledged; the other, "Indiana Canal Stocks," for the payment of which the Wabash and Erie canal, together with the lands and other assets belonging thereto, are pledged,—the state not being responsible therefor.

Upon this law, for each original bond of $1,000 and its accrued interest, the holders received, in 1847:—

1. For one-half the principal, a certificate for $500, bearing interest at 5 per cent., payable half-yearly, commencing 1st July, 1847; 4 per cent. in cash, 1 per cent. funded to 1st January, 1853, after which the whole is payable in cash.

2. For one-half the back interest, a certificate for $150, bearing interest at the rate of 2½ per cent. after 1st January, 1853. There stocks are payable by the state.

3. For the other half of principal, a certificate for $500, bearing 5 per cent. interest after 1st January, 1847.

4. For the other half of arrears of interest, a certificate of $150, bearing 5 per cent. interest after the 1st January, 1853.

These stocks are payable out of the revenues of the canal.

There exists, then, the following debt and stocks pertaining to the state of Indiana, up to the 5th August, 1850:—

1. The original bonds not surrendered, nor new certificates taken under the Act of 1846-7, but yet outstanding and uncancelled, to amount of one million four hundred and eighty-five thousand dollars.

2. The Indiana canal loan of $800,000, made by the bond holders to aid in completing the canal, bearing 6 per cent. Interest.

3. The Indiana state 5 per cents., issued for one-half the principal.

4. The Indiana 2½ per cents., issued for one-half the arrears of interest.

5. The Indiana canal 5 per cent. "preferred canal stocks," issued for one-half the principal to those of the bond holders who did advance their portion of the $800,000 loan to complete the canal.

6. The Indiana 5 per cent. "special preferred stock," issued for one-half the arrears of interest to subscribers, as aforesaid.

7. The Indiana canal 5 per cent. deferred stock, issued for one-half the principal to those who did not subscribe to the said $800,000 load.

8. The Indiana 5 per cent. special deferred canal stock, for one-half the arrears of interest to non-subscribers to said loan.

The canal stocks issued to subscribers to the loan, are called "preferred canal stocks," and will be first paid both principal aad interest out of the canal revenues, before either interest or principal is paid on the "deferred" canal stocks issued to non-subscribers, the latter coming in after the former are fully paid and satisfied.

The amount of these stocks on the fifth of August last, stood thus:—

Original bonds not surrendered or cancelled, then outstanding	$1,485,000
STATE.	
5 per cent. state stocks, paying 4 per cent. until 1853	$4,941,000
2½ per cent. state stocks, paying 2½ per cent. after 1853	1,775,600
CANAL.	
6 per cent. canal loan	$ 815,000
Preferred canal stocks, bearing 5 per cent interest from 1st January, 1847	4,079,500
Special preferred canal stocks, bearing 5 per cent. interest after 1st Jan., 1853	1,215,825
Deferred canal stocks, interest at 5 per cent. from 1st Jan., 1847	861,060
Special deferred canals, interest from 1st Jan., 1853	250,600

The market value of these different stocks is as follows:—

Indiana old bonds not surrendered, bearing interest since July, 1841, $600 for each bond of $1000.

Indiana 6 per cent. canal loan, half-yearly inter-

est, payable at the office of the trustees in New York, 88 per cent.

Indiana 5 per cent. state stocks, 84 per cent.

Indiana 2½ per cent. state stock, 44 per cent.

Indiana 5 per cent. preferred canal stock, 44½ per cent.

Indiana special preferred canal stock, 23 and 24 per cent.

Indiana deferred canal stock, 5 per cents., 15 per cent.

Indiana special deferred canal stock, 10 per ct.

Accrued interest in all cases going to the purchaser.

Of the above enumerated stocks, growing out of the funding arrangement, only the following are chargeable on the revenues of the state, viz:—

5 per cent. state stock, to amount of	$4,941,000
2½ per cent. state stock, " " "	1,775,600
Total the state has to provide for,	$6,816,600

When the old bonds yet outstanding are surrendered, and the new securities taken under the act aforesaid, there will be about $850,000 added to the above, making the total state debt $7,666,600.

The state owes another debt of $1,490,000, for 5 per cent bonds issued to pay her subscription to the State Bank of Indiana. The bank has regularly paid the interest on these bonds. It has also declared an annual dividend of 10 per cent. A large sinking fund has been created out of the excess of dividends; and it is believed that it will in time be sufficient to pay the entire debt, leaving nearly $1,000,000 for the benefit of common schools, to which the charter of the bank appropriates it.—The bank is the only investment from which the State has derived any profit.

Ample provision has been made to meet the interest, as it falls due, under the new arrangement. After the present year a sinking fund will begin to accumulate. The taxes are now assessed upon a State valuation of $148,000,000, and upon 149,986 polls; each being charged with a poll tax of 75 cents. A new valuation is to be made of the State, which will probably carry the amount up to $250,000,000. As the amount of taxes and valuation preserve the same ratio, this sum would give a sinking fund of $300,000, after the payment of interest.

In 1841, the State, owing a domestic debt of about $1,500,000, issued to her creditors evidences of debt, called State Scrip, redeemable for taxes. This issue has now been all called in, with the exception of about $77,000. This sum will be taken up the present year, leaving the entire revenues of the State government applicable to the reduction of its debt. The net revenues for the present year are estimated at $490,000, to be applied as follows:

State government	$90,000
Convention	70,000
Benevolent societies	60,000
Pay interest on funded debt	193,000
Scrip to be redeemed	77,000
	$490,000

The expenses of the convention are extraordinary: and as the $77,000 are for a debt to be called in, there will be $147,000 applicable to the sinking fund next year, with the same revenue as the present. But the increased valuation will probably be sufficient to produce a surplus of $300,000 a year for the sinking fund.

In 1820 the population of the State was 147,000; in 1830, 340,000; in 1840, 683,000; and in 1850, 1,000,000.

Most of the public works undertaken resulted in entire loss to the State. The value of the interest of the State in the Madison and Indianapolis railroad is estimated at from 2 to 300,000 dollars. The State has a residuary interest in the canal, which has been conveyed to trustees for the benefit of the State creditors. In reference to this work, we copy the following from the statement of Messrs. Winslow, Lanier & Co.

We have also taken pains to ascertain the history, present condition, and future prospects of the Wabash and Erie Canal, which stands pledged for the payment of the canal preferred five per cent. stocks. This canal commences in Ohio, about 20 miles east of the Indiana state line, thence by Fort Wayne, following the general course of the Wabash River by Peru, Logansport, La Fayette, Covington, Terre Haute, Point Commerce to Evansville, on the Ohio river, a distance of 379 miles, connecting in Ohio with an extension of the same canal 84 miles further, to Toledo, on Lake Erie, thus giving a continuous canal navigation from Lake Erie to Evansville on the Ohio River, a distance of 463 miles, traversing a country of great fertility, dependent on the canal for transportation to a market. This canal also connects in Ohio some 40 miles west of Toledo, with the Miama extension canal, which extends to Cincinnati, a distance of 212 miles, and is now in successful operation. As early as 1827, the congress of the United States made a grant of lands to the state of Indiana of each alternate section, for five miles on each side, for the purpose of constructing a canal from Lake Erie to the mouth of the Tippecanoe River, near Lafayette. Subsequently, other acts of Congress were passed, granting to the state each alternate section for five miles on each side of the entire line, for the purpose of continuing the canal from the Tippecanoe to the Ohio River. The state accepted the grants, sold a portion of the lands, completed the canal from the point of commencement in Ohio to Covington, a distance of nearly two hundred miles, and partially completed the line to Terre Haute, expending thereon nearly five millions of dollars, being the proceeds of sales of lands granted by Congress, bonds, etc.

By the terms of the act of the Legislature of 1846-7, the canal, together with the lands granted by Congress, belonging thereto, and other assets, were assigned by the Governor of the state to three trustee, two chosen by the bondholders, the third by the Legislature. The canal to be by them completed out of the said assets, the revenues of the finished portion of the Canal, and the $800,000 loan; and to be controlled and managed for the use and benefit of the holders of the $800,000 loan certificates; the Indiana preferred canal five per cents. first, and after they are paid, the residue, if any, for the holders of the deferred canal five per cent. stocks.

The trustees entered on the duties of their office, and have completed the line to Point Commerce, 352 miles from Toledo. The residue of the line, 111 miles, to Evansville, has been put under contract, and will be completed by the 1st November, 1852. It is confidently expected that the assets transferred to the trustees by the state, including near 900,000 acres of valuable land then unsold, lying along and near the line of the canal tolls, &c., arising from the finished portion, will pay off the entire cost of completing the Canal to the Ohio River, (including the $800,000 of cash already advanced by the creditors to aid in its completion,) and leave a clear net surplus of more than $300,000. When the trust came into the hands of the trustees in 1847, according to the estimates of the engineer, (which have proven to be correct,) it required about $2,000,000 to complete the line to Evansville, making the entire cost of the canal about $,7000,000. The receipts of the Canal in its unfinished state, were for 1848, $146,148 90; 1849, $134,459 03; 1850, $157,158 38. The failure of the wheat crop in 1849, occasioned the small receipts for that year. The result is that the payment of about $4,000,000 with five per cent. interest from the 1st of January, 1847, is chargeable on this canal, costing $7,000,000, receiving yearly, when but half completed, $160,000 of tolls. When the entire line to Evansville is completed (to which point the greater amount of shipments will be made,) it will be safe to estimate the net receipts at $300,000 annually. After 1852, the trustees holding the canal free of debt with a considerable surplus, for the use and benefit of the holders of the preferred canal stocks, will begin to apply the net proceeds to the payment of the arrears of interest, which will soon be extinguished. The Ohio canal from Cleveland to Portsmouth, on the Ohio River, 311 miles long, which does not traverse a country near so fertile as that through which the Wabash and Erie Canal passes, earns seven per cent. on its cost, (near $5,000,000,) it is but reasonable to expect that the latter will earn six per cent. on its cost of $7,000,000, it having no competition in railroads.

Railroads in Massachusetts.

Below is an exhibit of the different periods at which the railways of Massachusetts were opened:

Boston and Worcester, opened to Newton (Davis' Tavern) April 7, 1834; to Needham, July 8; to Westboro', November 15; and throughout, July 3, 1835.....miles	45
Taunton branch, opened throughout August 8, 1834	11
Boston and Providence, opened to Dedham June 30, 1834; and throughout, June 11, 1835	41
Boston and Lowell, opened throughout June 24, 1825	26
Lowell and Nashua, opened throughout Oct. 8, 1838	15
West Stockbridge, opened Nov. 30, 1848	3
Eastern, (the Eastern New Hampshire railroad, 17 miles in length, is included, being operated by the Eastern Massachusetts railroad,) opened to Salem August 28, 1838, to Newburyport, June, 17; and to Portsmouth, November 9, 1840; the Portsmouth Saco and Portland railroad was opened November 22, 1842	55
New Bedford and Taunton, opened throughout, July 2, 1840	20
Western, (the Albany and West Stockbridge railroad, 38¼ miles in length, is included, being owned and operated by the Western railroad corporation,)opened to Springfield October 1, 1839; to Chester Factories, May 22; to Pittsfield, August 9; and throughout, December 21, 1841	156
Boston and Maine, opened to Andover Sept. 1, 1836; to Haverhill, April 10, 1837; to Bradford, March 15, 1838; to Exeter, Dec. 1, 1840; to Newmarket, July 28, 1841; to Dover, September 24, 1841; and throughout July 24, 1843	55
Number of miles of branches opened in 1841	5
Charlestown branch, opened to junction with Lowell railroad November 1, 1839; to Fresh Pond, January 5, 1842; united with Fitchburg railroad, January 31, 1846	6
Berkshire, opened throughout December 1, 1842	21
Number of miles of branches opened in 1842	3
Number of miles of branches opened in 1844	2
Fitchburg, opened to Waltham December 20, 1843; to Concord, June 17; to Acton, Oct. 1; to Shirley, December 30, 1844; and throughout, March 5, 1845	45
Stoughton branch, opened April 7, 1845	4
Fall River, opened throughout June 9, 1845	42
Boston and Maine extension, opened July 1, 1845, and then united with the Boston and Maine	19
Old Colony, opened throughout November 10, 1845	37
Number of miles of branches opened in 1845	12
Lexington and West Cambridge, opened September 1, 1846	7
Pittsfield and North Adams, opened throughout October 8, 1846	18
Connecticut River, opened to Northampton December 13, 1844; to South Deerfield, August 17; and to Greenfield, November 23, 1846	36
Number of miles of branches opened in 1846	31
Dorchester and Milton, opened May 1, 1847	3
Providence and Worcester, opened throughout, October 20, 1847	43
Grand Junction, opened December 1, 1847.	6
Number of miles of branches opened in 1847	20
Cape Cod branch, opened to Agawun Jan. 1, and to Sandwich January, 31, 1848	28
Peterboro' and Shirley, opened to West Townsend February 15, 1848	12
Stony Brook, opened throughout July 1, 1848	13

Lowell and Lawrence, opened throughout July 1, 1848	12
Connecticut River, opened to Northfield Nov. 1, 1847	14
Worcester and Nashua, opened throughout December 15, 1848	46
Number of miles of branches opened in 1848	22
South Shore, opened throughout, Jan. 1, 1849	11
Vermont and Massachusetts, opened to Baldwinsville September 1; to Athol, December 27, 1847; to Northfield, July 1, 1848; and throughout February 20, 1849	69
Essex, opened throughout March 1, 1849	20
Norfolk County, opened to Blackston April 23, 1849	26
Harvard branch, opened December 31, 1849	1
Number of miles of branches opened in 1849	9
Stockbridge and Pittsfield, opened throughout January 1, 1850	33
Fitchburg and Worcester, opened throughout February 11, 1850	14
Newburyport, opened to Georgetown May 23, 1850	9
Salem and Lowell, opened throughout Aug. 5, 1850	17
South Reading branch, opened Sept. 1, 1850	8
Petersboro' and Shirley extended	2
Number of miles in operation, Dec. 31, 1850.	1,142

The following will show the progress of railway communication in the state:—

Years.	No. of railways in operation.	No. of miles in operation, January 1.	Cost.
1836	4	123	.....
1837	4	123	.....
1838	4	123	.....
1839	6	141	.....
1840	6	141	.....
1841	8	216	.....
1842	10	432	$19,087,013
1843	12	462	19,971,593
1844	12	462	20,396,055
1845	12	464	21,572,820
1846	16	623	27,034,927
1847	18	715	32,796,363
1848	21	787	41,392,632
1849	27	945	45,125,768
1850	32	1,094	50,959,452
1851	36	1,142	51,873,895

Institution of Civil Engineers.

The paper read was "A Description of the 'Royal Border Bridge,' erected over the River Tweed, on the line of the York, Newcastle, and Berwick railway," by Mr. G. B. Bruce, M. Inst. C. E.

This viaduct, the total length of which was 2,160 feet, and the extreme height 129 feet, consisted of twenty-eight simicircular arches, each 61 feet 6 inches span; and the whole constructed of stone, with the exception of the inner part of the arches, which was of brick laid in cement. It was divided into two parts by a central abutment, which enabled the land arches to be completed, and, along with a temporary timber bridge, to be brought into use for public traffic before the completion of the river arches, which necessarily occupied a considerable period in execution, owing partly to very substantial coffer-dams having been requisite for the river piers; but principally to its having been thought advisable to pile the foundations of most of those piers, as the bed of the river was liable to be scoured away by the rapid stream. The piles, both of the coffer-dams and of the foundations, were mostly of American elm, as it was found that the heads of the memel piles required to be frequently cut off and re-hooped, when driven by Nasmyth's steam pile-driver, which was almost entirely used, both on account of expedition and of economy; for it was proved, that whilst the hand-ram only gave one blow in four minutes, the steam pile-driver gave sixty blows in one minute, and that the cost of the former was two shillings per lineal foot, whereas that of the latter was very little more that one shilling per lineal foot. It was also remarked that the force was more advantageously employed in the case of the steam pile-driver, as, on account of the ram being heavier and the fall less, the piles were not so frequently split.

The piers had an ashlar facing, and were filled in with well-grouted rubble, having occasional through courses of ashler, and an ashler tie in the centre of their width from top to bottom. Great care was taken in the preparation of the mortar and the grout used in this work, and after a variety of experiments the plan finally adopted was,—in the case of setting lime for ashes,—to grind quicklime dry by itself, in a common mill, and then to mix it with coarse sharp sand, screened out of gravel taken from the bed of the river, in the proportion of three of sand to one of quicklime; this was then put under cover until required. Lime to be used for grout was also ground dry, and along with it was ground slag from an iron furnace, then gravel from the river was mixed to it without being screened, the proportions being, quick lime one, slag three-quarters, and gravel two and a quarter. The mortar when used had absorbed a sufficient quantity of moisture from the atmosphere and the sand, to prevent its being too hot for use, and yet, as it had not been previously mixed with water and wrought into a paste, it retained its original setting power. This mortar required to be very soft, and the stones to be well wetted, and as the sand was very coarse, thick joints were necessary, but in a few weeks it set as hard as Roman cement. All the lime used in this work was from the mountain limestone of the Scremerston and Lowich districts of Northumberland.

The centres, which were stated to have been of peculiar construction, were supported entirely from the piers, so as to prevent any accident happening, if the scaffolding was injured, either by the heavy floods of ice to which the river Tweed is subject in winter, or from the vibration caused by passing trains; as, when the idea was first entertained of having a temporary bridge, the intention was merely to add to the contractors' scaffolding, and to make it serve for both purposes. This intention was however, abandoned, and an entirely separate timber bridge was erected, on the east side of the stone bridge, at a cost of £14,340.

The total cost of the "Royal Border Bridge" was £120,000, and of the whole contract, one mile in length, in which it was comprised, £207,000, including an embarkment, which had to be made entirely from side cutting, and which contained probably 760,000 cubic yards.

Mining in China.

D. D. J. Macgowan, corresponding member of the Asiatic Society of Bengal, has thrown much light on the subject of the presence of coal seams in China, and the results attending the working. He states that this mineral exists, to a greater or less degree, throughout the different mountain ranges which girt the great plain of China. On its northern boundary it is met with in numerous localities, on the Celestial Mountains, on the Mongolian stepps, and various offsets of the Altai range, the most productive of which are Shinking and Shansi. Unskilful mining, and the absence of cheap means of transit, greatly enhance the cost. Except for manufacturing and culinary purposes it is little used, the inhabitants trusting to the furs and skins of animals for protection from the extreme rigor of their winter. Chinese mythologists gravely state that in some of the mines the furnaces still exist in which Nurkwa fused stones for repairing holes in the heavens. The most ancient worked deposits lie in the middle and southern parts of the empire. The coal most in demand is called Kwang coal, from the province of Hunan. It is black, very compact, columnar structure, occasionally irridescent; and from a superabundance of carbon, almost analogous to Pennsylvanian anthracite. It burns intensely with a little blue flame, deposits a red ash, and the specific gravity is 1.34.

Numerous varieties are produced in the provinces of Kiangsu, Chehkiang, Singan, and Changshan; and the probable annual produce in China is about 800,000 tons, producing nearly $6,000,000. The paucity of the supply is not owing to the poverty of the mines, but chiefly to the want of those facilities for mining which the steam-engine alone can supply. The earliest notice of coal is recorded in the history of the Hun dynasty, from 202 B.C. to A.D. 25, or 2050 years ago; while in Europe it has been little known above 300 years. To appreciate rightly the value of these vast coal deposits, extending from Corea to Siam, its value must be applied to the changes which are taking place in the route of transit with western Europe, and the prospective greatness of Anglo-Saxon states springing up in the neighborhood of the Chinese shores. —*London Mining Journal.*

New Safety Valve.

Mr. James Nasmyth, of the Bridgewater Foundry, near Manchester, has registered an "absolute safety valve"—the construction of which, although simple, is very ingenious, and the objections to the valves now in use are effectually removed. It is free from all external or internal spindles and contrivances intended to act as guide-rods, which often corrode, and render the valve no indicator of the variations of pressure. It has no external lever or weight, therefore cannot be tampered with by being over-loaded; but, as the inventor states on the diagram, "the chief feature of novelty in this safety valve consists in the manner in which the swaying backwards and forwards motion of the water in the boiler is employed to keep the valve free, and so remove all tendency to become fast in its seat, whether from mud or any other cause. The valve and seat being portions of a sphere, they fit in all positions." To understand this more distinctly, we may state that the upper part of the valve consists of a brass sphere, say 7 in. diameter, resting upon a concave rim, about 5 in. diameter, open below, and in which circular rim it can move freely in all directions, something like a glass globe placed on the rim of a tumbler glass (without bottom.) Through the centre of the sphere is screwed a vertical rod, which descends into the boiler. Half-way down it, and in the stream, it is surrounded by a cylindrical weight, adjusted to the pressure required, and calculated according to the area of the valve. At the bottom of the rod, and partly in the water, is what we take to be a hollow sphere, which the movement of the boiling water will constantly keep in motion. The whole represents something like a pendulum, and the slight oscillation communicated to the bottom of the rod will make the sphere at the upper end of it move in the rim, and thus prevent the valve from becoming inoperative by adhesion. The diagram was inspected by a large number of gentlemen, an additional interest being attached to it in consequence of the recent serious loss of life by boiler explosions.—*London Mining Journal.*

Wabash and Erie Canal.

The board of trustees of this work met at Evansville on the 23d ult. There were present, Charles Butler, Esq., President; Thomas Dowling, Esq., Resident Trust.; and Dr. W. R. Noffsinger, State Trust. Jesse L. Williams, Esq., Chief Engineer, was also in attendance.

Of the more important matters acted upon, says the Evansville Journal, were the arrangements made for a side cut at Clinton, and the subscription by the board of two thirds of the capital stock, for a bridge over the Wabash at the same place. The board also determined, for the purpose of providing suitable business facilities at Evansville, to widen nearly one and a half miles of the Canal, to *sixty feet water line*; and to build a sufficient number of bridges—the proper authorities securing the trustees against damages for the right of way, and assuming the charge of repairs and rebuilding of all bridges after they have once been properly constructed.

The navigation of the Canal, from Toledo to Point Commerce, has been complete and uninterrupted since about the first of April.—Some damage has been caused, it is reported, by heavy rains on the Upper Wabash, within a few days past, and which may cause some interruption.

The Newbury division is finished, except the dam at Newbury, and a small amount of work on the tow path. It will cost about $3,000 to complete the dam.

On the Maysville division it will cost $20,000 to

finish it. It is expected, should no great unforeseen difficulty arise, that the line of Maysville may be completed and filled with water by the first of September next.

The work on the Petersburg division, with the exception of the White River aqueduct, is in an advanced state. This division may be expected to be finished by spring—steps were taken by the board to ensure the completion of the aqueduct as rapidly as practicable.

The estimates on the Evansville division, up to May 1st, inclusive, amount to $87,579. The force now employed by the contractors on this division, is equal to about 1000 men.

The trustees agreed to unite with the Ohio Board of public works in the erection of a Weigh Lock at the junction of the Wabash and Erie and Miami canals in Ohio, to be used for the joint benefit of both canals.

A New and Economical Locomotive Engine for Light Trains.

We have had opportunities, during a month past, of observing the performance of a new Locomotive on the Dedham branch railroad, of a style and character adapted to the light trains, which are generally known as special trains, and which are now so universal and frequent on the railroads terminating in the city. These trains are especially intended for the accommodation of those residents of towns in the neighborhood, whom pleasure or business call daily into the city. It becomes important, therefore, that the trains should be frequent and the fare cheap, in order to command the maximum amount of travel. Hence it has been deemed desirable to study the greatest economy in working the kind of trains to which we have alluded. Two great sources of expense are observable among the items which make up the expenditures of operating a railroad, viz.: fuel, and repairs of railroad, which last includes the wear and tear of iron. The effort towards economy in the locomotive running on the Dedham branch, has been directed to these two points, that is, a saving of fuel and in road repairs. In the latter item, as we have remarked, is included wear and tear of iron; and experience is teaching us every day that the durability of the iron has been over estimated; and will prove a material of expensive and not unfrequent renewal. Not to tax it beyond necessity, by running *twenty ton* locomotives, when machines of half that weight will perform the same service, with a consumption of half the quantity of fuel, is a common sense proposition, which none will dispute.

We propose, briefly, to state the service performed by the new locomotive of which we have spoken, and which is called the "Roxbury," premising that some six weeks ago it took its place on the Dedham line, in lieu of a twenty-ton locomotive, and has regularly performed the duty assigned to the latter, hauling occasionally two passenger cars of seventy seats each, and a baggage car. The distance run is ten miles, (with a grade of 52.8 feet per mile, 3 miles in length,) making seven stops to take and leave passengers; and the time between Boston and Dedham never exceeds thirty minutes.

The "Roxbury" was built at the machine shop of the Boston and Providence railroad company, by their master mechanic, Mr. Geo. S. Griggs, and in substantial and neat workmanship is in keeping with his well known and established skill. The following are the description and dimensions of the "Roxbury," as taken from Mr. Griggs's notes:—

Six wheels—a pair of drivers of 4½ feet diameter; a pair of forward wheels; and a pair of trailing wheels of 33 inches diameter.

From centre to centre of extreme axles, 11½ feet, the driving shaft being 6 feet from the shaft of trailing wheels.

Cylinder 9 inches; length of piston 16 inches; cylinder of boiler 30 inches; number of tubes 115; outside diameter of tubes 1¾ inch; tube surface 331 square feet; fire box surface 35 square feet; total heating surface 366 square feet; and of grate 4½ square feet; boiler contents, 30 cubic feet of water.

The water tank and wood space are placed upon the frame of the machine, to which the former is secured, in the rear of the foot board. The tank carries 40 cubic feet of water. The machine presents altogether a very compact appearance, and runs very steadily. An arrangement of arms and levers is attached, which is brought into action on ascending planes, so as to add to the adhesive weight and thus renders the machine more efficient where a higher power is required. Prepared for service, the total weight is something over ten tons, which being distributed on six wheels, will, compared with the usual heavy locomotives in common use, save the track very materially.

The comparison of fuel consumed, in lbs. is 73.38. —*Boston Traveller.*

Stupendous Machine for Shipping Coal.

Messrs. Finch & Willey, iron founders, of Liverpool, have just completed a large machine for the Newport Dock company, to load coal vessels, without the aid of any intermediate carriage between the railway wagon and the ship. By means of this immense machine, the coal truck, which, with its contents, will amount to about 13 tons, will be raised to an elevation of 16 feet; and, by an ingenious mechanical appliance, as the truck ascends it will be gradually turned in such a manner as to discharge its ponderous contents into the ship; the whole time of the elevation, discharge, and descent, only occupying one minute and a half. The machine resembles slightly the temporary fixed cranes used in the erection of churches and other large buildings, for raising large blocks of stone, but the framework is much stronger than even these colossal structures; and, large as it is, it is planted on wheels, so that the whole may be moved to any particular point along the line of docks on which it is intended to be used. It will probably be moved through a distance of 500 yards occasionally. The coal trucks, by means of a railway laid down at the docks, will approach the ship's side, in the centre of the frame work of the large crane, and run upon a moveable platform, which by means of a couple of unusually strong straps, worked upon large cylinders by a ten-horse power steam engine, will be raised to an elevation of 16 feet, when by means of a lever the contents of the wagon will be tilted into the vessel. On the other side is a compensating power—a large iron trough capable of being ballasted to almost any weight. Its object is to regulate the descent of the truck; thus saving an unnecessary expenditure of steam power. The weight of the machine is 45 tons; and the same small engine which works the crane also moves it along the line of docks as required. The following will give some idea of its dimensions:—length, 32 feet; height, 34 feet; and width, 22 feet. By the aid of this appliance, 1000 tons of coal may be shipped in a day with no more manual labor than will be afforded by three men and a boy. At the trial of the machine on Monday, Mr. Braithwaite Poole, several members of the Dock company, and a number of gentlemen connected with the coal trade, were present, and appeared to be highly pleased with it.—*London Mining Journal.*

Chicago and her Railroads.

A short time ago it was the chief pride and boast of the Garden City that she was at the head of the lake navigation, and at the only point where the waters of the Mississippi mingled with those of the lake, through a direct and navigable channel.—These, then considered almost unequalled advantages, were deemed sufficient to cause her soon to rival the largest of our western cities in point of population and wealth, if not outstrip them in reaching the goal—excelsior. If the above named advantages were sufficient to cause such great advancement, what shall the thought of those about to be conferred upon her by reason of the several railroads now projected and in process of completion. We may be considered chimerical, but we hazard the assertion, that ere six years roll by, Chicago will have no less than seven great lines of railway completed, and centering at, and radiating from her, and connecting her with every considerable city in the Union. We refer to the Michigan Central and Southern lines, the Aurora and Peru, Galena and Chicago Union, Rock Island and Chicago, Milwaukee and Chicago, and the great Illinois Central, and her branches to St. Louis and Cincinnati. A part of the above named roads will probably be completed in the course of two or three years, and perhaps sooner. We shall also be in connection with the Mississippi at seven different points, viz: Dubuyne, Galena, Savannah, Rock Island, Ottawa, St. Louis and Cairo; and with the Illinois river at four different points, viz: Ottawa, Peru, and Naples, being, in addition to this, on the direct route to the Pacific. These roads have an existance, other than on the map, and in the heated brain of fancy—they are realities, and under the control of those who are both able and desirous to complete them as soon as money and energy will do it. In view of such advantages as these, who shall ascribe a limit to the population and wealth of our noble State and city? Who shall picture their future destiny? Our canal and railroads, however, are not the only things that are contributing to our prosperity; plank roads, the farmer's favorites, are stretching away into the interior, in almost every direction, tapping the richest and most productive regions in the Union, and pouring into our lap produce of all kinds in great abundance. In view of all these advantages, what better inducement can be offered by any city or State to the industrious and enterprising immigrant. The mechanic, of whatever description, may readily find constant employment at good and even high wages. The farmer cannot find a better country to pursue his vocation; good markets are, or very soon will be, accessible from any point, at low rates of transportation. Land is rapidly rising in value, the increase paying a good percentage on the investment, in addition to the profit to be derived from its cultivation. In view of all these unequalled advantages, we feel confident that enterprising and industrious immigrants from all parts of the old world, will pour into our State by thousands, while many from New England will make Illinois their abiding place. They will find room enough for them all, and a hearty welcome from the suckers.—*Chicago Tribune.*

Early Application of Steam.

About 280 B. C., Hero, of Alexandria, contemporary with Ctebiscus, formed a toy which exhibited some of the powers of steam.

A. D. 540—Anthemius, a mathematician and architect, employed by Justinian to embellish Constantinople, in a dispute about the walls of a house, was vanquished by the eloquence of Zeno. To avenge the defeat, Anthemius arranged several chauldrons of water, each covered by the wide bottom of a leathern tube, which rose to a narrow top, with pipes extended to the rafters of the adjoining building. A fire was kindled beneath the chauldron; the steam of the boiling water ascended thro' the tubes, and the house was shaken by the efforts of imprisoned vapor. This is the first notice of the power of steam, as recorded by Gibbon.

Stuart, in his work on the steam engine, says, that the royal Spanish archives record that "Blasco de Garay tried a steamboat of 209 tons, with tolerable success, before Charles V., at Barcelona, June 17, 1543. Ravago, the chancellor, opposed it, and it, was laid aside. It consisted of a chauldron of boiling water and a moveable wheel on each side of the ship." The expense of the experiment was paid by the government, and a present made to Garay.

The first railroad was constructed at Newcastle-on-Tyne, A. D. 1650.

The first idea of the steam engine in England, was in the Marquis of Worcester's "History of Inventions," A. D. 1663.

Newcomen made the first steam engine in England, 1710.

Steam engines first applied by Savary for taking ballast or gravel out of rivers, and for raising great quantities of water. Patents granted in London, 1718.

James Watt made the first perfect steam engine in England, 1764.

First idea of steam navigation in England was set forth in a patent to Jonathan Hulls, for a vessel to go against wind and tide, 1736. Thomas Paine proposed this application in America, 1778. Marquis Jouffroy constructed one on the Saone, 1781. Two Americans published on it, 1785. William

Simington made a voyage in one in 1789, on the Forth and Clyde canal; in 1802 the experiment was repeated.

In the meanwhile, John Fitch, of Philadelphia, navigated a boat by a steam engine of his own contrivance, on the Delaware, 1787.

Ramsey propelled a boat by steam at New York, in October, 1782.

But it was Robert Fulton, a native of Pennsylvania, who first brought steam navigation to such practical perfection, that it became successfully and generally used by all nations. As early as 1793, he began to apply his attention to the subject; soon after, he visited England and France; examined Symington's vessel, in Scotland; in 1803, in conjunction with Mr. Livingston, the American minister in France, navigated a boat by steam on the Seine—and succeeded in perfecting steam navigation in 1807, when he started the first permanently practical steamboat, the "Clermont," on the Hudson river, at New York.

Oliver Evans, a native of Philadelphia, constructed a locomotive steam engine to travel on a turnpike road, and invented several improvements in machinery.

Alabama.

Montgomery and West Point Railroad.—In our paper of the 3d ult., we gave a brief notice of the operations of this road for the past year. We have since received the annual report of the directors, which enables us to present a more detailed statement of the condition of the company.

The gross income of the road for the past year amounted to the sum of $140,057 09. The current expenses to $67,148 73. Income from other sources $8,155 48. Making the whole net revenue $81,-063 84. From this sum should be deducted interest paid on loans of $23,492 41; leaving the sum of $57,571 43, which is equal to 9½ per cent on the capital stock.

The whole amount received by the company the present year is as follows:

Balance on hand at the commencement of the year	$30,343 36
Net income as above	57,571 43
Received on company's bonds	54,065 50
	$141,980 29

The expenditures (of which $80,349 78 was for the extension from Opeleika to West Point) independent of running the road, have been $117,889 75, leaving $24,090 54 applicable to the payment of the bonds of the company. The amount of bonds issued to assist in building the new road, was $61,065 50

Paid March 1, 1851	21,171 50
Leaving outstanding	39,894 00
Of this sum there is due on the first day of July	16,000 00
The balance	$23,894 00

will be due March, 1852. So that the net income of the company, says the report, will be amply sufficient to meet every outstanding obligation, and provide the necessary increase of locomotives and car force.

The receipts of the road for the past five years have been as follows:

1847	$55,787 97
1848	79,706 83
1849	95,665 90
1850	123,781 61
1851	140,057 09

The road was opened for travel to West Point on the 1st of May last; so that a great part of its business thus far has been local. This has been sufficient to yield a very large return upon the capital stock of the company. Its completion to the Chattahoochee river will add very largely so its receipts. As soon as the Atlanta and Lagrange railroad shall be completed, there will be a continuous line of railroad from Savannah and Charleston to Montgomery. An immense stream of travel will then be thrown upon this route, as it will prove, in connection with the Tombigbee river, the great route between the Atlantic cities, and Mobile and New Orleans. For the purpose of extending the connections of this road still further, the above company proposes to build a railroad branching off from Opeleika, to Columbus, Georgia, a distance of 30 miles. The estimated cost of this branch is only $285,926 37. The route has already been surveyed and found to be very favorable, and we presume its construction will be immediately commenced. This route would save a distance of 64 miles in going from Montgomery to Macon over that by way of Lagrange and Atlanta. This connection would constitute the Montgomery and West Point railroad the trunk line of both lines of railroad in Georgia, and would probably have a strong tendency to prevent the building of the Girard and Mobile railroad. The report expresses the opinion that a large part of the trade of Columbus would pass over the Montgomery road, and that the merchants belonging to Columbus, would use it as the route by which they would receive their goods.

The above is the only road in operation in Alabama. Its prosperous condition is an encouraging example, and shows what we may expect of the other roads in that State, when they shall come into operation.

The whole cost of the road may be stated as follows:

Capital stock	$623,800 00
Forfeited stock	67,190 88
	690,990 88
Indebtedness	595,217 99
	$1,286,208 87

Illinois.

Mississippi and Atlantic Railroad.—We see it stated in the Illinois papers, that the senate of that state have decided that the above company is authorized to proceed under its charter in the construction of its road. The railroad law of Illinois provides that after a subscription of $1000 to each mile of line, shall have been obtained, companies may organize by the choice of officers, etc.; that such companies may then apply to the Legislature for a charter, giving them the right to commence active operations. The above company organized under this law, but on application to the last Legislature a confirmation of its charter was refused. The company claimed that it had a right to build its road without any additional legislation, and this is the point, as we understand the matter, which has been decided in its favor.

Georgia.

Georgia Railroad.—On the 24th ult. we gave a brief statement of the operations of this road for the year ending March 31, 1851. We have now the annual report of the directors, and are enabled to give a more detailed statement of the affairs of the company.

The gross earnings of the company from railroad operations, for the year ending 31st March last, were.	$728,923 15
And the expenses of management	302,437 10
Leaving net profits from road operations	426,486 05

The business operations and resulting profits of the company, from all sources, for the past fiscal year, may be briefly stated thus:

Gross earnings of the road as above		$728,923 15
" " bank		55,485 49
		784,408 64
Charged with road expenses	$302,437 10	
Charged with interest on bonds	45,861 56	
Charged with expenses of bank, including bank taxes, etc	15,224 59	
		363,523 25
Net income from all sources		$420,885 39

Two dividends have been declared from these profits of $3 50 per share, each, or 7 per cent per annum, on the capital stock, amounting to $280,-000, and leaving surplus profits applicable to other purposes, of $140,885 39.

It will be perceived that the gross profits of the road, compared with the year preceding, have increased $102,116 13, while the net profits have only increased $27,961. And while the gross receipts from all sources have increased $140,885 39, the net profits have increased only $35,169 20.

"This diminution," says the report, "of net profits, in proportion to gross receipts, has been occasioned, in part, by increased taxation—but mainly by the great advance in the price of labor, materials and provisions, as stated in the reports of the resident engineer and superintendent of transportation. It is, however, to be observed, that our expenses still continue to compare favorably with the best managed roads in the country, as may be seen by a comparative statement appended to this report."

The business has also suffered very much, the report states, from the deficient outfit and bad condition of the State road from Atlanta to Chattanooga. About 50 miles of this road was laid with a flat bar, which is nearly worn out, and has now become a constant source of annoyance. It has not been the policy of the State of Georgia to furnish its road with an outfit; and a portion of the machinery, we understand, has been furnished by the connecting road. Steps have now been taken to procure a suitable equipment.

The item of receipts from the road were as follows:

1851.	
Passengers	$244,028 92
Freight	446,499 34
Rent and mails	38,394 89
	728,923 15
1850.	
Passengers	$189,650 45
Freight	398,006 92
Rent and mails	39,149 65
	626,807 02

There have been 2 passenger and 5 freight engines added to the motive power of the road the past year. The whole force now consists of 35 locomotives, all in good condition. The outfit of cars consists of

12	eight wheeled	passenger cars.
4	" "	baggage "
14	" "	stock "
181	" "	box "
109	" "	platform "
5 four	"	passenger and brake cars.

Every department of the road is now in efficient condition. It is earning a very large income from its present business. In a short time this must be very much increased from the extension of the lines with which it will be connected. The Atlanta and

West Point, the East Tennessee and Georgia, and the Nashville and Chattanooga will soon be completed, as will the Memphis and Charleston, opening extended railroad communication in different directions. We see no reason why the revenues of the company should not rapidly increase, and no contingency by which they can be diminished. The road is now one of the most successful in the country, and pays a large dividend to its stockholders. This dividend can be kept up, and a large reduction be soon made in rates of fare. It will probably be found, in the long run, to be a mistake for companies to attempt to earn or divide over seven per cent. Money is worth no more than this on a safe investment, and any higher rate is sure to provoke rival projects, and in the end competition will carry the earnings below that point. The worst thing that ever happened to the Massachusetts railroads, were the high rates of dividend which were made for one or two years.

We are glad to see that the Engineer of the road, Mr. Grant, advises a trial of the compound rail by the company. "In the present plan of track," he says, "the whole strength of the iron way is broken at irregular intervals of about 20 feet, subjecting the machinery to shocks of greater or lesser intensity at each of these points, while the same shocks are communicated to the track, disturbing its adjustment both in line and level, and each successive train receives and gives increased injury. The joints are the fruitful sources of accident, and a large portion of the labor of adjusting track is due to these defects. When gravel or broken stone ballast can be procured, in which to imbed the cross ties, the evil above referred to is not so much felt—because the ties are founded in material, in a great measure unyielding under the weight of passing trains, and which is not affected by water.—The track once carefully adjusted and well packed in the ballast, is not easily disturbed, unless by the action of frost. Our dependence for ballast is mainly upon clay, which is only firm when dry. Under the action of water it becomes soft and yielding, offering an imperfect and uncertain support to our heavy trains. With this defective foundation for the track, the evil of a succession of breaks in the iron way is severely felt. When the road-bed is wet we are often obliged to adjust the same portions of track twice a week to insure the safe passage of trains.

If the "compound rail"—by distributing the joints so as to have not more than one-half of the strength of each line of rails broken at any one point, obviates, to the extent claimed, the labor of adjustment and liability to accident, it should at least receive a fair trial at our hands. One mile laid in the main train will soon test its merits—and if the plan should not fully commend itself to the directors for future adoption, the amount which may be purchased for trial will hardly fail to do equal service with the plan now in use."

The superintendent of the road, Mr. Arms, states that "chilled tire have been in successful use in all the driving wheels of the last engines. With less original cost and greater duration than the wrought iron tire, they can be renewed with much greater facility, and will be found to effect an important saving in this expensive part of locomotive renewals. It has been objected to these tire, that they have less adhesion than the wrought iron—but after a trial of both, under the same engine, we have not found this objection of the shightest *practical* validity."

Statement of the Business and Expenses of the Georgia Railroad from its opening to April 1, 1851.

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Ascension.—Duncan F. Kenner, John Thibaut.
Lafayette.—A. Mouton, Joachim Revillon.
St. Landry.—E. H. Martin, T. C. Anderson.
St. Martin.—Alex. Declouet, Jno. Moore.
St. Mary.—Francis D. Richardson, John B. Murphy.
Terrebonne.—J. C. Potts, James J. Hanna.
Lafourche.—Geo. S. Guion, R. Collins.
Assumption.—Geo. Schwing, H. A. W. Roberts.
Lafayette City.—H. E. Lawrence, A. S. Phelps.

A committee was also appointed for the purpose of drawing up an address to the people of the south west; to disseminate among the neighboring states the views of the people of New Orleans on the subject, and to convene a general railroad convention from those states to meet in that city on the second Monday in January next, so that by an interchange of ideas, a union of means and energy, to be concentrated upon a system of railroads, may be obtained.

The convention was composed of the most influential men in the state. The best feeling prevailed, and a firm determination was manifested to commence and complete the road at the earliest day.

The road is estimated to cost $1,600,000, one half of which is to be borne by New Orleans, and one half by the Parishes on the route. In relation to the route, and the business prospects of the road, we copy the following from the New Orleans Commercial Bulletin:—

The route proposed by the convention commences at Algiers, and terminates at Washington, in the parish of St. Landry, 6 miles beyond Opelousas. The road will be one hundred and sixty-six miles in length, and will pass through, or in the vicinity of Pattersonville, Centreville, Franklin, New Iberia, St. Martinsville, Vermillionville, Grand Couteau and Opelousas; the parishes immediately interested in the road are, St. Landry, Calcasieu, Lafayette, Vermillion, St. Martin, and St. Mary's, and ourselves.

Of the practicability of the route there can be no doubt—the whole of the country is represented to be extremely favorable—its healthiness from experience, is proved to be unexceptionable, and its fertility equal to the best lands in Louisiana. Mr. Payne, the able and zealous champion of the enterprize, remarks, and he knows the country from personal exploration, that if unsurpassed health and fertility of soil be any elements on which to feed a railroad to fulness, and to which add its equally unsurpassed loveliness, with so great a commercial Mart as New Orleans for its terminus, then of all countries or sections, this presents considerations to capitalists, no where else equalled on this continent for safe investment of money.

There are no physical obstructions on the line of the projected route, which may not be easily overcome. What bays or bayous intervene may without difficulty be bridged or cause-wayed; but little grading or filling up will be required, and upon the whole, there are as few if not fewer obstacles to overcome, than upon any other road of equal extent in the Union. The cost of making the road, including equipments, etc., is estimated at ten thousand dollars a mile.

So much for the practicability of the road. Of its value and productiveness there cannot be a shade of doubt; for it runs through one of the richest sugar, cotton and grazing countries to be found anywhere. We have no time to copy the tabular statements that have been prepared with great care by Mr. Payne, which show conclusively the immense advantage that will accrue to the section of country through which this road is to run, comprising 23,000 square miles of the finest lands in the world, not one-fifth of which are now in cultivation for the want of an outlet. We will simply take the article of sugar, and predicate our estimates, not upon what the country is capable of producing, but assuming for our data the crop of last year, which every one will admit was a bad sugar year.

The sugar that was produced last year in the section of country through which this road is proposed to pass, amounted to 110,800 hogsheads, besides 193,900 barrels of molasses. We will not now take into account the 33,000 bales of cotton produced in the upper parishes, and the 40,000 head of beef cattle, calves, and sheep, brought from the same region to the New Orleans market.

Reducing the cost of transportation on the railroad, of the sugar and molasses before mentioned, to one-half of the present cost, and including return freight and passage money, we make an estimate of gross receipts amounting to $439,000, from which deducting for maintenance of the road 40 per cent. or $165,640, a net income is left of $273,460, or 17 per cent. on the cost of the road.

As the proposed route, as far as it goes, is on the direct route to Texas, the people of New Orleans confidently count upon its future extension to that state, and regard it as the commencement of a road which will ultimately be extended to the Pacific.

Canada.

Great Western Railroad.—Messrs. Erastus Corning, J. M. Forbes, and others, have issued a report upon the Great Western railroad in Canada West. The design is to build a nearly straight road through Canada West, connecting Detroit with Niagara River, and thus giving to New York and Boston a continuous and direct railroad communication with the west, by means of our Western railroad, and Hudson River road, over the Central line of New York. The amount asked of American capital is but $1,000,000. The rest will be furnished by individuals in Canada, and by the Provincial Government. The estimated cost is but $5,000.000, and already from 2,500 to 3,000 men are at work upon the track. The calculation is that the necessary means will be raised as follows:

Municipal subscriptions in Canada....	$550,000
Reliable private subscriptions in Canada	240,000
Additional subscriptions in Canada can be safely calculated upon to the amount of	60,000
Contractors' stock about	800,000
	$1,650,000
American subscriptions desired to complete the work.....	1,000,000
Total stock.....	2,650,000
Provincial 6 per cent. guarantee bonds.	2,650,000
Total means if the $1,000,000 American stock is taken.....	$6,300,000

The capital authorised by law is $6,000,000.

Ohio.

Scioto and Hocking Valley Railroad Company.—At a meeting of the stockholders of the Scioto and Hocking Valley railroad company, on Thursday last, it was decided to have the route through Vinton and Hocking counties to Lancaster, surveyed as soon as possible without detriment to the work now going forward. The law of last winter in relation to the Jackson county subscription, was rejected, the stockholders at the same time expressing their willingness for an amicable arrangement with the Iron railroad company. The remainder of the road as far as Jackson, (54 miles,) has been put under contract.

Pennsylvania.

Railroad from Philadelphia to Lake Erie.—The Sunbury American takes a correspondent of the Ledger to task for inaccuracies in an article on the best and shortest railroad route between Philadelphia and the Lakes. Two routes are mentioned by which Williamsport can be reached from Philadelphia, viz.: one by way of Harrisburg and Sunbury, and the other by way of Schuylkill valley and Cattawissa, to the latter of which the correspondent of the Ledger gives a decided preference, on account of the difference in distance and the tax on freight that the Susquehannah route will be subjected to. In regard to distance, the editor of the American suggests a third route, viz., the Danville and Pottsville railroad, which appears to him more feasible, and superior in every respect, to that which preference is given in the Ledger. Of this road, 20 miles from Sunbury to Shamokin, have been in use for years. At this end 12 miles of the road are also finished. This leaves but 14 miles of road to be made to connect the Susquehanna and Schuylkill. By this route the distance from Philadelphia to Williamsport is 180 miles, 10 miles shorter than the Cattawissa road. But the American thinks that grade as well as distance should be considered in the location of a road, and therefore regards the Harrisburg and Susquehanna route as infinitely superior to the Cattawissa—the grade between Williamsport and Harrisburg in no place exceeding 4 feet to the mile, while the maximum grade on the Cattawissa route is 66 feet.

Hempfield Line.

On Friday, June 13th, Charles Ellet, Jr., Esq., Chief Engineer, and hon. T. M. T. McKennan, the President of the Hempfield line, left Washington, Pennsylvania, to reconnoitre their route; it is their intention to double man the route at once with proper corps of engineers, and complete the business immediately, in order that the merits of this important link in the railway system, between the seaboard and the Mississippi Valley, may be fully and promptly developed.

The recent resolution of the Cincinnati and Belpre company, to make Marietta a point, and abandon their connexion with Baltimore, is likely to turn the trade of Southern Ohio into the lap of Philadelphia, through the Hempfield line, which promises at present, to be the trunk line for several important branches in Ohio.

Kentucky.

Covington and Lexington Railroad.—The grading and bridging of this road is now under contract all the way from Covington to Paris, in Bourbon County.

Ohio.

Eaton and Hamilton Railroad.—We learn that a contract has been negotiated by this company, for iron to lay the track from Hamilton to Richmond. The contract is said to be very favorable for the company, and the iron will be ready for shipment immediately.

We are authorized to say, by the President of the company, that if the energy of the board is responded to by the stockholders, in the prompt discharge of their instalments of stock, no ordinary event will prevent the cars from running to this place during the ensuing winter.—*Eaton Register.*

Toledo, Norwalk, and Cleveland Railroad.

A letting on this work between Fremont and Norwalk is advertised. The line is also open for private contracts from Norwalk to the Grafton Station of the C. C. & C. road.

Michigan Southern Railroad.

This road is to be extended to Chicago within the year, if possible. The company are re-laying the track between Adrian and Hillsdale, and will soon commence east of Adrian. The extension of the road will be opened to White Pigeon by the 4th of July, and to Constantinople soon after. The iron is arriving at St. Joseph for the Northern Indiana road, which is a continuation of the Michigan southern. From the state line to the South Bend, twenty-five miles, the iron will soon be put down, and it is the design of the company to push the work to Chicago by the 1st January, 1852.

Morris Canal.

The Newark Daily Advertiser says—The Morris canal is now in good working order throughout the whole line and full of business. The recent improvements have greatly enlarged its capacity, affording increased facilities for the rapid and systematic transportation of freight: being now able to do double the business it formerly did. Boats can pass over the planes in five minutes with 60 tons cargo, whereas, before, it required half an hour to pass one with 50 tons. We understand also that coal loaded boats from Mauch Chunk may be expected to arrive here in the course of to-day, being the first through that channel the present season.

Notice to Contractors.

Engineers Office, E. T. & V. R. R. Company,
Greenville, E. T., June 5th, 1851.

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851. 3m.

AMERICAN RAILROAD JOURNAL.

Saturday, June 21, 1851.

Stock and Money Market.

In the actual condition of the money market there is but litte change to note interesting to our readers. Money continues abundant for all legitimate operations. New projects have to pass a pretty severe scrutiny before they are enabled to borrow money; but they all are enabled to supply their wants in one way or another, so as to keep fully at work.—We see nothing to produce a different state of things at present. Shipments of gold continue large, but the export does not exceed the import; and as we are now a gold producing country, it is to our interest to ship our surplus, just as it is to ship our surplus crop of wheat.

The prices of railroad bonds range all the way from 80 to 90 cents on the dollar. There can of course be no uniform standard. Rails continue low, without much prospect of an advance. The iron market in England is dull, and this has a tendency to keep down the prices of railroad bar.

To our mind there is but little prospect of any considerable advance, as a rise of a few dollars per ton would set our rolling mills in this country at work.

The trafic table of railroads, as will be seen below, shows an extraordinary increase of receipts, which is a very favorable indication for the future.

The following railroad companies have declared dividends, payable on or about the 1st of July, viz:

Old Colony railroad company	2 per cent.
Fall River " "	3 " "
Boston and Worcester railroad company,	3½ " "
Fitchburg " "	4 " "

The bids for the Panama railroad bonds were taken at an unexpectedly good price, and the am't bid for was $271,000 more than was wanted. The bidders were as follows:

Wm. H. Webb	$20,000
Wm. W. Rose	2,000
S. Burhaws, Jr	1,000
H. Crossman	2,000
H. Sandford	3,000
George Law	100,000
J. Meredith	3,000
S. B. Stone	2,000
Edward Curtis	6,000
Charles Morgan	25,000
P. Reynolds	1,000
W. H. Aspinwall	30,000
H. A. Coit	50,000
Francis Skiddy	5,000
J. B. Varnum	20 000
John Paine	20,000
M. Livingston	18,000
R. Withers	10,000
E. Bartlett	20,000
J. L. Stephens	20,000
G. G. Howland	15,000
J. H. Burgy	25,000
S. S. Howland	15,000
C. W. Lawrence	10,000
G. B. Lamor	45,000
Winslow, Lanier & Co	35,000
Alsop and Chauncey	30,000
A. Norrie	15,000
Reserved by request for the Royal Mail Steam Packet Co. of Southampton	150,000
De Launey, Iselin & Clarke, for themselves and others	473,000
Total—all taken at par	$1,171,000

Which is $271,000 more than the company offered.

Boston and Maine Railroad.—Statement of earnings and expenses of the Boston and Maine railroad for the half years ending May 31st, 1850 and 1851:

May 31, 1850—Earnings.	
From passengers	$159,290 64
From freight	94,266 52
From mails	3,224 69
From rents of buildings and roads	15,088 94
	$271,870 79
Expenses	137,238 41
Net earnings	$134,632 38
Depreciation of stock and cars	1,790 88
	$132,841 50

May 31, 1851—Earnings.	
From passengers	$178,155 11
From freight	98,214 93
From mails	2,817 54
From rents of buildings, roads and interest	16,491 66
	$295,679 24
Expenses	137,754 15
Net earnings	$157,925 09
Charged off for new rails and boiler at engine house	9,530 87
	$148,394 22
Dividend on 41,557 shares 3½	145,449 50
Reserve	2,944 72

Cleveland, Columbus and Cincinnati Raiload.—The earnings of the Cleveland, Columbus and Cincinnati road (135 miles) in May, was $36,460
In June, 14 days 15,207

The business of the Columbus and Zenia road in April was $14,002
May 15,114
June, 14 days 8,430

The estimates of the Columbus and Zenia Co. for June is $17,000
Cleveland, Columbus and Cincinnati road. 46,000

Cheshire Railroad—The receipts of the Cheshire railroad were, for

May, 1851	$18,187 82
May, 1850	14,951 89
Increase—nearly 22 per cent	3,235 93

The increase for April was about 25 per cent.—In the three preceding months upward of 20 per cent. Last year the dividend which was earned was appropriated to the payment of outstanding obligations.

Fall River Railroad.—The following is the condition of the Fall River railroad company, May 31st, 1851:

ASSETS.	
Roads, buildings, equipments, etc	$1,068,167 01
Materials, bills receivable, etc	50,090 36
Total assets	1,118,257 37

LIABILITIES.	
Capital stock	$1,650,000 00
Bills payable	7,426 65
Accounts payable	2,913 30
Total liabilities	1,070,339 95
Excess unappropriated, applicable to dividends	57,917 42
Reserved fund, December 1, 1850	26,712 77
Amount regarded as earnings winter, six months	31,204 65
In the expenditures are embraced one new locomotive $7,500	
Three new platform cars 1,200	
Land purchased at Fall River. 272	
	8,972 00
Which is regarded as an offset for depreciation, but if added to the six months net income, would increase the amount to	40,176 64

A semi-annual dividend is declared of $3 per share, payable July 7th, to stockholders of record at the close of business on the 20th inst.

Housatonic Railroad.—The receipts of the Housatonic railroad for the month of May were $24,539 50
Same month last year 19,079 35
Gain about 29 per cent $5,460 15

Vermont and Massachusetts Railroad Receipts.—

Receipts in May, 1851	$17,348 35
Same month last year	14,142 38
Receipts in first five months	$76,962 74
Same time last year	62,452 10
Gain nearly 25 per cent	$14,510 64

SALES OF STOCK IN NEW YORK.

	June 12. Sales.	June 19. Sales.
U. S '67 Loan	116⅜	116¼
Erie R.R.	86⅜	82½
Harlem R.R.	76¼	73⅜
Stonington	43⅜	44
L.I. R.R.	19¾	20
Norwich & Wor.	65	64
Del. & Hudson	121¼	121¼
Reading	57¼	55⅝
Morris Canal	16¼	16½
Erie income	96¾	95⅝
" " Bonds.	103	103¼
Canton	71	73
Farmers Loan	69	68

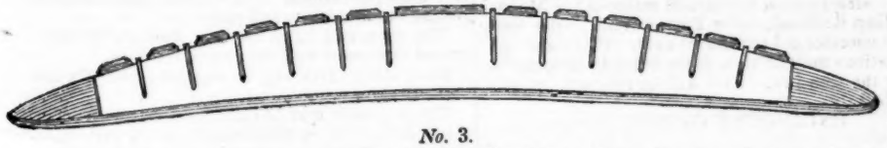
SALES OF STOCKS IN BOSTON.

	June 11.	June 18.
Old Colony Railroad	67⅛	69
Boston and Maine R.R.	107½	104
Eastern Railroad	101¾	102⅛
Fitchburg Railroad	113½	110
Michigan Central Railroad	104	103½
Northern Railroad	71½	71¼
Vermont Central Railroad	36½	36
Vermont and Mass. R.R.	30	31
Western Railroad	107⅛	107⅛
Ogdensburg Railroad	39½	39
Rutland Railroad	57½	57
Boston and Worcester Railroad	106⅛	103¾
Rutland Railroad Bonds	97	97
Ogdensburg Railroad Bonds	97½	99
Vermont Central R.R. Bonds	91⅛	91½
Boston and Providence R.R.	93	93¼
Philadelphia, Wilm'gton & Balt.	30½	30½
Concord R.R.	55	55

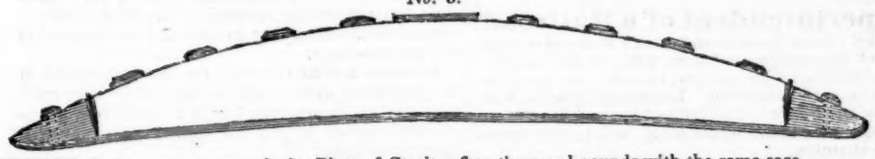
PATENT EXCELSIOR SPRING
for Railroad Cars, Locomotives, etc.

No. 1.—At Rest.

No. 2.—Under Heavy Pressure.



No. 3.



THESE Springs are composed of a Plate of Steel with Oak or Ash Wood, firmly riveted thereto, having saw kerfs in which are inserted flat plates of metal. The Spring is very powerful and yet sensitive.

They are now being manufactured and sold by the Excelsior Spring Company, under a Patent granted on 20th May, 1851.

The above Drawing, No. 1, represents a side view of the Spring when it is at rest. No. 2, shows the same when under heavy pressure. No. 3, represents a Spring having only two plates instead of the usual number inserted in the wood.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring fifty or five thousand pounds with the same ease.

The cost of the springs is *very much less* than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. *Each Spring is guaranteed* to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Ohio and Mississippi Railroad Company.

The annual election of the directors and officers of this company took place on Monday and Tuesday last, in this city. The directors are as follows:

Abner T. Ellis, Samuel Judah, Wm. Burtch and W. F. Hebert, of Vincennes, Indiana.

John Cobb, Geo. W. Lane, and Thos. Gaff, of Aurora, Indiana.

Elias Conwall, of Ripley county, Indiana.

E. B. Reeder, J. A. James, James C. Hall, A. Tafft, John Baker, C. W. West, Geo. W. Cochran, J. Slevin, C. Stetson, D. F. Goodhue, E. M. Gregory, Nat. Wright, and John S. G. Burt, of Cincinnati, Ohio.

The directors made choice of the following officers for the ensuing year:—

President—Abner T. Ellis, Esq.

Secretary—H. H. Goodman.

Treasurer pro-tem—H. H. Goodman.—*Cincinnati Chronicle.*

Indiana.

The Shelbyville, Rushville and Knightstown railroad companies, have contracted with the Madison company to find the cars, locomotives, &c., and to run their road for five years.

Virginia.

Orange and Alexandria Railroads.—The Alexandria Gazette says:—The stockholders on Friday, in general meeting, passed a resolution for the construction of the Warrenton branch, and gave the directors the power to borrow $360,000, the amount required for the completion of the middle section.

Peoria and Mississippi Railroad.

The total amount of stock subscribed in the above improvement—which is designed to connect the flourishing cities of Peoria and Burlington—up to the latest dates, was $314,000; being much more than the charter requires for the organization of the company. We learn that the individual subscriptions are divided as follows: Peoria, $30,000; Farmington, $25,000; Knoxville, $18,000; Monmouth, $1,500; Burlington, $40,000. The cities of Peoria and Burling, and the county of Warren, have taken in their corporate capacities $200,000 additional, making $314,000 in all.

Indiana.

Railroad from Cincinnati to Chicago.—A convention, numerously attended by the citizens of Indiana, and by persons connected with the various railroad companies interested in the above line, was held at Newcastle, Indiana, on the 6th instant, to take measures to secure a continuous railroad between the above cities. Hon. John Woods, of Hamilton, presided. Delegates were in attendance from Logansport, Rochester, New London, Kokomo, Middletown; counties of Hamilton, Madison and Delaware; and the Eaton and Hamilton, the Cincinnati, Hamilton and Dayton, the Richmond, and Miami and the Four Mile railroads.

The convention was addressed by the President, and by Judge Elliot, President of the Newcastle and Richmond railroad; W. A. Bickle, President of the Richmond and Miami railroad company; Williamson Wright, President of the Lake Michigan, Logansport and Ohio River railroad; Abner Haines, President of the Eaton and Hamilton railroad; Wm. Garver, of Noblesville; and N. C. McCulloch, of Oxford, Ohio; and resolutions adopted, providing for preliminary surveys, under the direction of the New Castle and Richmond company, of several routes, viz: 1st. A direct line from New Castle to Logansport. 2d. From New Castle to Logansport by way of Pendleton and Tipton. 3d. From New Castle to Logansport by way of Andersontown and Kokomo. 4th. From New Castle to Logansport via Pendleton, Noblesville and New London. 5th. From New Castle via Pendleton and Noblesville to Lebanon, in Boone county; with the ulterior idea of connecting Cincinnati with Chicago, by Hamilton, Eaton, Richmond, New Castle and Logansport; and further, that the company at Logansport be requested to examine the northern division of said line beyond Logansport, so that comparative estimates as to its alignment and grades may be had for the benefit of all concerned preparatory to the final location of said road, making the final connections aforesaid. A committee was also appointed to procure subscriptions to the stock of the company, and obtain releases of right of way, etc., etc. The best spirit prevailed at the meeting, and the utmost confidence was expressed in the ability of those interested in the line, to complete the road at an early day.

The construction of a railroad from Cincinnati to New Castle is provided for by companies already organised. A short link from New Castle, would carry the line to the Peru railroad at Noblesville. The Peru road is in progress, and will be completed in less than two years. By the adoption of this road as a part of the line to Chicago, the extent of line to be built, the construction of which is not already secured, would be reduced to that between New Castle and Noblesville, and Peru and Chicago. The above would form a very direct route, and its construction could be easily accomplished by the parties interested. It would serve every purpose of a straight road, and could be made at one half the cost of a direct line from New Castle. As our western friends have no money to spare upon parallel lines, or those not absolutely necessary, are not the above suggestions worthy of attention?

European and North American Railway.

PORTLAND, June, 12, 1851.

At a meeting of the Executive Committee of the European and North American Railway, held at Portland, this day—

Present, JOHN A. POOR, ELIZAH L. HAMLIN, ANSON G. CHANDLER, } of Maine.
R. JARDINE, GEO. BOTSFORD, } of New Brunswick.
R. B. DICKEY, of Nova Scotia.

Among other matters acted upon, it was unanimously

"Resolved, That the executive committee of the European and North American railway, have examined with great satisfaction the very able report of A. C. Morton, Esq., upon the European and North American railway, submitted to the Governor of Maine; that all our previous hopes and expectations, as to the feasibility of the undertaking, are fully confirmed thereby; the practicability and the paying qualities of the line from the city of Bangor, in Maine, to the Atlantic shore of Nova Scotia, are therein fairly established, and that we commend this report, and the enterprize itself, to the people of the country through which it is to pass, and to all who favor the plan for shortening the transit between Europe and America."

"Resolved, That as the Legislatures of the State of Maine and of the Province of New Brunswick, have granted concurrent charters, incorporating the European and North American railway from the city of Bangor to the line of Nova Scotia—and the Province of New Brunswick has granted facility bills in aid of the same, the unanimous opinion of this committee is that books of subscription to the stock be forthwith opened, and the companies organized in Maine and New Brunswick, and the work of construction actively commenced on completion of the required subscriptions—not doubting that the Province of Nova Scotia will in some manner most agreeable to itself complete its portion of the work as soon as the other parts of the line are finished, so as to form a continuous line of railway from the cities of Boston and New York to the Atlantic shore of Nova Scotia."

"Resolved, That the decision of the Portland Convention, as to the practicability and advantages of the European and North American railway, has been abundantly confirmed by the expressed opinion of various public bodies, and the press generally, in both Europe and America. That this

decision has been most signally enforced, by the recent action of the British ministry in favor of the Halifax and Quebec line, through the agency of which it is proposed to build that portion of the European and North American railway which is situated in Nova Scotia; and while we express no opinion as to the feasibility of Earl Grey's scheme, as stated by Mr. Howe. it is not claiming too much for the friends of our scheme to say, that, it is to their exertions and to the superior claims which the European and North American railway has, upon the attention of the commercial world, that the action of the British government is to be traced; and we may confidently assert that, if the Halifax and Quebec line presents advantages to the business of this continent, to justify its construction on any terms, the European and North American railway presents such infinitely higher claims to public favor, as to justify us in expecting its early completion."

Voted, That the foregoing extracts from the records of the proceedings of the committee, be certified by the Chairman and Secretary, and published in the newspapers of the United States and the Provinces.

JOHN A. POOR,
Chairman.

R. B. DICKEY, Secretary.

It seems from the action of the above committee that the Province of New Brunswick is disposed to stand by the European and North Americal railroad, and not to become a party to the Halifax and Quebec railroad. The reason assigned for this, is the fact, that the latter would involve the building a road by that Province three or four hundred miles long, on a route which would accommodate but a small part of her people, while the former is both the line of convenience and economy. She is governed in her decision by considerations of pecuniary profit, uninfluenced by those arising from political objects. On the other hand, Mr. Howe, the Provincial Secretary, is now at Toronto, for the purpose of conferring with the Canadian Government in reference to the Halifax road. The public look with much interest for the result of this conference. The two projects of which we have spoken, are the great topics of public interest in the Lower Provinces, and the result must be the construction of one or both of them. This is inevitable. The agitation of the questions growing out of these projects, is the commencement of a new era with the colonies, and may be followed by results widely different from those now anticipated.

For the Railroad Journal.

The Schenectady and Catskill Railroad.

The Schenectady and Catskill railroad must soon be made, and it will then be quite apparent, that an important cut off had remained long unnoticed. There may be a good railroad made here, in the distance of 41 miles, with an extreme grade of 26 feet to the mile. This would afford the central line the best possible connexion with the boats; it would also be just as good a connexion with the Hudson river railroad, as at Albany, and a saving of 12 or 13 miles. When the competition shall become active between the central line and the Erie road, when the stockholders of the Utica and Schenectady road shall see their true connection, and when the Hudson River and the Harlem roads shall also be competing to Albany, then the Catskill and Schenectady route will come into demand. Where is there an unoccupied route in the state that compares with this? If it is an object to shorten and to expedite routes, then the value of this work is manifest, of course, it will relieve from all the questions between Albany and Troy. They would be left to their legitimate business, which would all be right. This would be the route to Saratoga as well as to the west. It is therefore quite fair to believe that there will soon be a railroad from Schenectady to Catskill, and its value is less problematical than many works that may be affected by it.

K.

Catskill, June 10th, 1851.

To Contractors.

PROPOSALS are invited for laying the superstructure on the first 38 miles of the Manassas Gap Railroad, up to Farrowsville;—the work to be commenced in August next. Plans and specifications may be seen at the office in Alexandria, after the 28th inst. Bids will be received up to the 5th of July

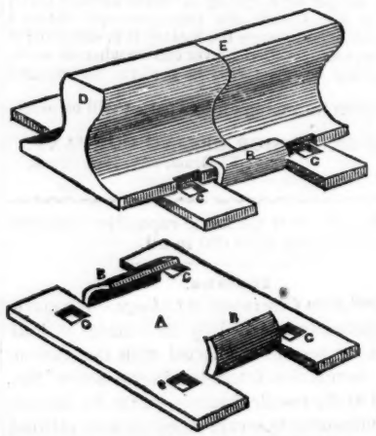
ENGINEER'S OFFICE, ALEXANDRIA.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A.B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Also;

Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,
28 Beaver st., New York.

June 5, 1851.

TO CONTRACTORS.

Engineer's Office, S. S. R Road Co.
Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

To Contractors.

OFFICE PACIFIC RAILROAD CO.,
St. Louis, Mo., May 16, 1851.

THE Graduation, Masonry, and the Laying of the Superstructure of the first Division of the Pacific Railroad, comprising about 45 miles from the city of St. Louis, westward, will be ready for contract on the 20th of June next.

Proposals will be received at the Engineer's Office, St. Louis, from the 20th to the 30th of June, where plans and specifications will be shown. The line will be ready for inspection on and after the 20th of June.

The line will be divided into sections of about one mile each, but offerers can include as many of them in one bid as may suit their convenience.

The company will not bind itself to accept the lowest offer, unless in all other respects satisfactory, but reserves the power to dispose of the work in such manner as may appear most advantageous to the interests of the company.

The Division will embrace about one million three hundred thousand (1,300,000) cubic yards of graduation, and about thirty three thousand (33,000) cubic yards of masonry.

THOMAS ALLEN, President.
JAMES. P. KIRKWOOD, Chief Engineer.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.
Piqua, May 20, 1851. 3t22

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK. Troy, N. Y.
or, MOORE HARDAWAY, Richmond, Va.
March 6. 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
N0. 51 New st., New York.
September, 1850.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower Postoffice.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greensville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

SUPERIOR BLACK WRITING & COPYING

INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	$1 50	6 oz. per dozen,	$0 50
Pints, "	1 00	4 " "	0 37½
8 ounces, "	0 62½	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured, it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21tf THEODORE LENT.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

To Railroad Companies.

SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

LOWMOOR
AND
U. S. BEST FINCH IRON.
To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior Staffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH;" and Merchants and Wholesale Dealers in all other kinds of British Iron.

—

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS.,
JOHN FINCH Sen.

Boston, April 11, 1851.

—

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wronght Iron Railway Chairs, Railway Spikes, etc.

—

To the Managers of Railways, Engineers and others:

Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicite your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

—

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston.

Yours very respectfully,
WM. BAILEY LANG.

Boston, April 11, 1851.

—

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

—

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division,)
WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,
OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

—

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a *single instance* of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The *Tires* being LOWMOOR iron, 1¼ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,
Yours, truly, WM. EMMETT.

—

☞NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 2800 WHEELS and 1400 AXLES; value over $100,000.

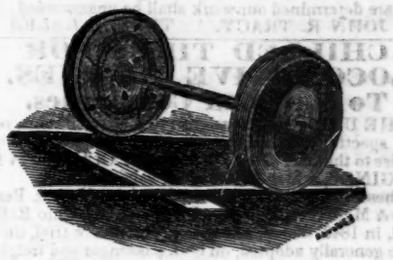
Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO

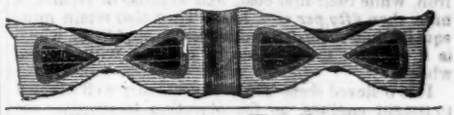


Van Kuran's Improved Rail-Road Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bitts, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

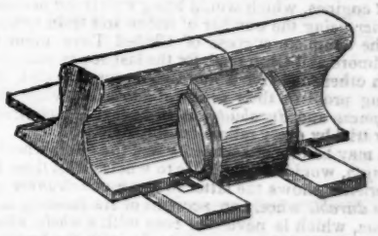
WM. FIELD, Agent. RUFUS WATERMAN, Treas.

PROVIDENCE, R. I.

Railroad Iron,

SPIKES, AND

WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorised to contract for Welsh *Railroad Iron* of the best quality, and deliverable at any port on favorable terms, also *Spikes and Wrought Iron Chairs*, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.

Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.

CHARLES ILLIUS

RAILROAD CAR MANUFACTORY

TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.
Passage, Freight and all descriptions of

RAILROAD CARS,

AS WELL AS

LOCOMOTIVE TENDERS,

Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

CHILLED TIRES FOR LOCOMOTIVE ENGINES.

To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the *adhesive* character and *strength* of the Tire.

During a service of seven years, these Tires have very much exceeded in *durability* those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less.* They also retain more equally their *diameter and proper form of tread*, which is a point of much value in engines with *coupled* wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to *coupling* the wheels of locomotives is the *encreased friction*, arising principally from the *unequal* wear of wrought tires; and hence most of the freight engines where wrought tires are used, have but *four* wheels as *drivers*, with frequently a weight of *sixteen tons*, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the *track* is like a car with *sixteen tons* upon *four* wheels, and it is presumed no one would permit *cars* so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight *necessary for adhesion* may be distributed upon more *driving* wheels, without any material disadvantage to the engine, and thus placing *less weight* upon a *single point*, would relieve the *track*, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light* engines, which would bring with it the necessity of *increasing* the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness* and *durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole* wheel for *strength*, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable* wheel, on account of its freedom from *tension*, which is never the case with a *whole* wheel. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled* tires, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and *wrought* tires have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby increasing the *strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851. L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office,
Jan. 2, 1850.

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult, is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & Mc Mahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the *preference* over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not *all* called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
WM. PARKER, General Supt., etc.

—

January 29, 1851.
Philadelphia, Wilm. and Balt. R. R. Office,
Wilmington, Del.

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.'

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,
I. R. TRIMBLE,
Engineer and General Supt.

—

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,
JOHN KINSMAN, Supt. E. R. R.

—

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited. COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by
HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
73 New street,

February 3, 1849. New York.

Glendon Refined Iron.

Round Iron,	Band Iron,	Hoop Iron,
Square "	Flat "	Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849. 3m37

ENGINEERS.

Atkinson, T. C.,
Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W, H,,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,
Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Engineer, Chartiers Co, Pittsburgh, Penn.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,
Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

DAVIS'S
ALHAMBRA HALL,
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....FISK & SPERRY,
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. *BUFFALO.*

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. BARNUM & CO.

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,
BY JOHN GILMAN,
$1 *Per Day.*
No. 206 Pratt street, (near the Depot,)
BALTIMORE.

GUY'S
United States Hotel,
(Opposite Pratt street Railroad Depot,)
BALTIMORE.
JOHN GUY. *WILLIAM GUY.*

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, ... Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R, Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good stole and at reasonable rates. Particular attention wil be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.,) Coals for Steaming, etc.
ORDERS RECEIVED FOR AND FILLED by J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods. Also, Agent for the Manufacture of Telegraph Wire. 218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention wili be paid to the exploration of mines and to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, *Warranted* Good.
FILES.
Manufacturers of Machinists' Warranted Best Cast Steel *Files*, expressly for working upon Iron and Steel, made very heavy for recutting.
☞ A full Stock of *Steel* and *Files* at all times on hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED —'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES
FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.
ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.
CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,
IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.
Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire ROPE AND CABLES,
For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns' for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.

Iron Store.
THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y43

Bowling Iron. Stamped B.O.

Railway Tire Bars | Rivet Iron
Locomotive and other Axles | Locomotive Frame do
Boiler Plates | Bars,

and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Ibbotson, Brothers & Co's CELEBRATED CAST STEEL AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shoveland Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent.,
218 Pearl st., New York.

Smith & Tyson,,

IRON COMMISSION MERCHANTS,
BALTIMORE.

REFINED Juniata Charcoal Billet Iron for Wire.
Do. for Bridging, of great strength.
Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntzs Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on he oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel, AND ENGINEERING AND MACHINE FILES,

which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
24 Cliff St., New York.
November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " 6x2 " 7 feet 8 in. long.

Now in store and for sale by
RAYMOND & FULLERTON,
45 Cliff street.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
$m9 62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.
New York, Aug. 26, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.
New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ¼ to 5 inches diameter. Flats, from ¾ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call. J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.
300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.
New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of Sout ı and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electerised Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.
Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.
And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.
July 27th, 1850.

Railroad Spikes, Wrought Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being FINISHED BY HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

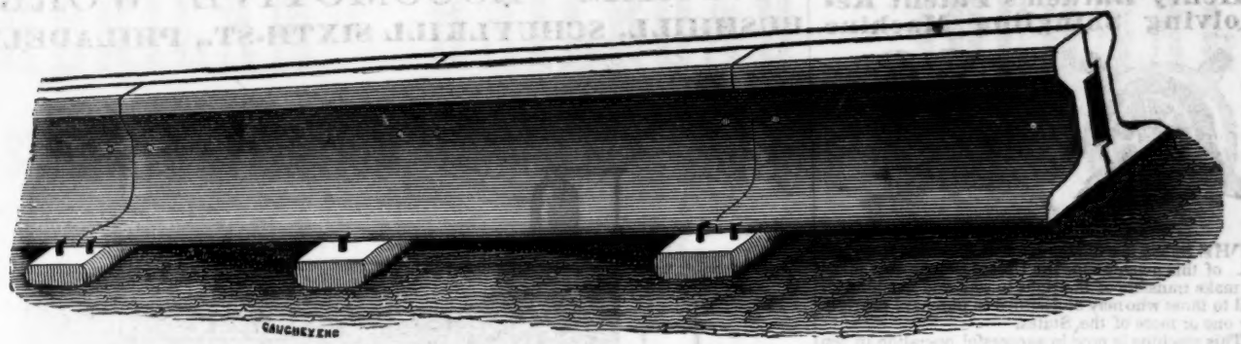
All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring. F. M. RAY,
New York, Oct. 23, 1850.

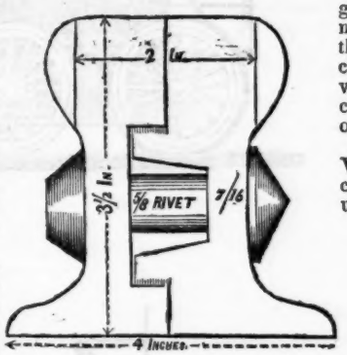
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable* and *continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.



This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President, Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass.

These Axles enjoy the highest repulation for excellence, *and are all warranted.*

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price $1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for *round, square, flat, band, hoop and scroll iron,* will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by

RAYMOND & FULLERTON,
6t21 45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, *President* Troy, N.Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N.Y
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES FOR TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N.Y.
"GLENDON" brand, Lehigh county, Pa.

Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES. — The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, o Erastus Corning & Co Albany; Merritt, & Co., New York; E. Pratt & Brother, Baltimore, Md.

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mil (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp,s Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron.

Exchange Place, Baltimore.

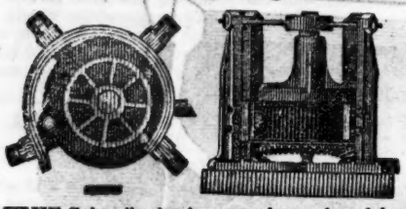
Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St,
New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the tubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

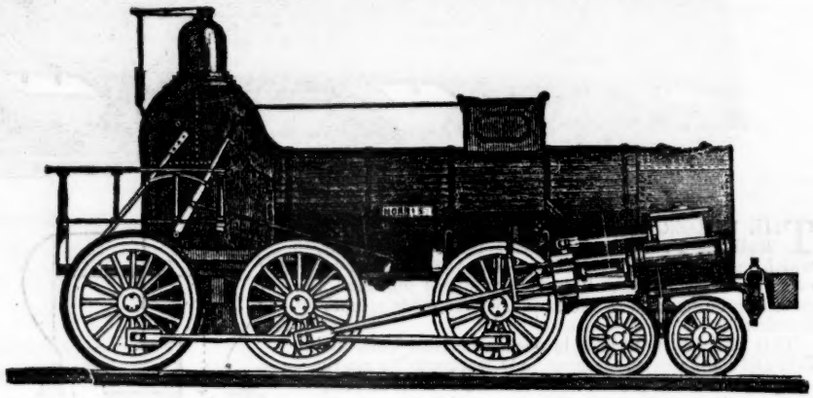
He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others. J. L. BROWN.

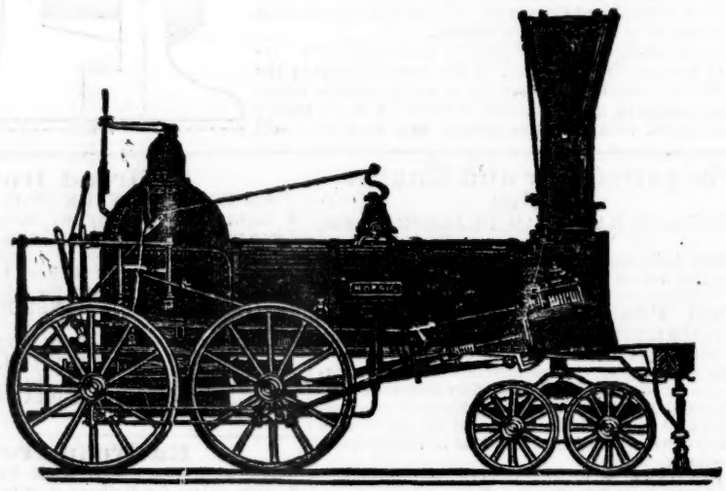
☞ Bank Scales made to order, and all Scales of his make Warranted in every particular.

Reference given if required.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general asssortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,
☞ *Sole Manufacturers.* ☜
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States.

☞ The Premium of the AMERICAN INSTITUTE was awarded to the *Etna Safety Fuse* at the late Fair held in this city.

November 3, 1849. 1y

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up *Arrangements of Wrought Iron Pipes* for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for *Railroads, Farms, Yards*, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy N.Y.